AMENDMENTS TO THE CLAIMS:

Claims 1 and 2 (Previously canceled)

Claim 3. (Currently amended) A method for manufacturing a semiconductor device comprising:

implanting arsenic ions in a semiconductor substrate at a first acceleration energy level which suppresses a reverse channel effect to form arsenic ion implanted regions;

implanting phosphorous ions in the arsenic ion implanted regions, following the arsenic ion implanting, at a second acceleration energy level lower than the first acceleration energy level, so as to form a concentration peak of the phosphorous ions located in the arsenic ion implanted region, a phosphorous ion-implanted region extending beyond said arsenic ion-implanted region; and

performing a heat treatment to activate ~~heat-treating the ion-implanted regions for activation of~~ the arsenic ions and the phosphorous ions in the ion-implanted regions to form source/drain regions and buffer regions, said buffer regions comprising phosphorous ions and extending beyond said source/drain regions.

Claim 4. (Currently amended) The method as defined in claim 3, further comprising ~~wherein~~

implanting n-type impurities [are implanted] in said substrate to form an n-type extension region before the arsenic and phosphorous implanting.

Claim 5. (Previously amended) The method as defined in claim 3, wherein a dosage of the arsenic ion is determined to obtain desired electrical characteristics for said semiconductor device, and an acceleration energy and a dosage of the phosphorous ion are determined such that an ion-implanted region of the phosphorous ion extends beyond a bottom surface of an ion-implanted region of the arsenic ion.

Claim 6. (Currently amended)) The method as defined in claim 3, wherein the acceleration energy of the arsenic ion is not higher than 15keV, and the acceleration energy of the phosphorous ion is not higher than 10 keV ~~and is lower than that of the arsenic ion~~.

Claim 7. (Original) The method as defined in claim 3, wherein the dosage of the arsenic ion is between $2 \times 10^{15}/cm^2$ and $1 \times 10^{16}/cm^2$, and the dosage of the phosphorous ion is between $5 \times 10^{14}/cm^2$ and $2 \times 10^{15}/cm^2$.

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Claim 8. (Currently amended) A method for manufacturing a semiconductor device comprising:

implanting arsenic ions in a semiconductor substrate at a first acceleration energy level to form an arsenic ion implanted region;

after said implanting said arsenic ions, implanting phosphorous ions in said arsenic ion implanted region at a second acceleration energy level lower than said first acceleration energy level; and

performing a heat treatment ~~heat-treating said ion-implanted regions~~ to activate said arsenic ions and phosphorous ions to form an n-type source/drain main region comprising arsenic and phosphorous ions, and an n-type source/drain buffer region comprising phosphorous ions, said n-type source/drain buffer region extending beyond said n-type source/drain main region.

Claim 9. (Previously added) The method as defined in claim 8, wherein said device comprises an n-type metal oxide semiconductor field effect transistor (NMOSFET).

Claim 10. (Previously added) The method as defined in claim 9, wherein said NMOSFET comprises a gate electrode formed over a channel region, and wherein said n-type source/drain buffer region separates said n-type source/drain main region from said channel region.

Claim 11. (Previously added) The method as defined in claim 10, wherein said substrate comprises monocrystalline silicon and said arsenic ion implanted region comprises an amorphous silicon region.

Claim 12. (Previously added) The method as defined in claim 11, wherein a p-n junction formed at a first interface between said channel region and said buffer region is separated from a second interface between said amorphous silicon region and said monocrystalline silicon.

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Claim 13. (Previously added) The method as defined in claim 11, wherein point defects generated by said implanting phosphorous ions are absorbed by said amorphous silicon, such that diffusion of said phosphorous ions during said heat-treating is suppressed.

Claim 14. (Currently amended) The method as defined in claim 1 ~~8~~, wherein said first acceleration energy level comprises about 10 keV or less ~~first acceleration energy is reduced without increasing a p-n junction leakage current~~.

Claim 15. (Previously added) The method as defined in claim 8, wherein said first acceleration energy level comprises about 10 keV or less.

Claim 16. (Previously added) The method as defined in claim 8, wherein said heat-treating comprises heat treating at about 1000°C for about 10 seconds.

Claim 17. (Previously added) The method as defined in claim 8, where in an arsenic concentration in said n-type source/drain main region is between $1 \times 10^{20}/cm^2$ and $5 \times 10^{21}/cm^2$ and a phosphorous concentration in said n-type source/drain buffer region is between $1 \times 10^{18}/cm^2$ and $5 \times 10^{19}/cm^2$.